**UNIVERSITY OF CALGARY** | VP SERVICES | Environment, Health and Safety

**Field Safety Hazard Control Library**

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# FIELD SAFETY HAZARD AND CONTROL LIBRARY

This library is intended to prompt discussion about tasks, existing and potential hazards, and controls to mitigate those hazards.

Some examples of tasks, hazards and controls have been provided; however, this library is not all inclusive and supervisors are expected to add additional details specific to their field activities and travels.

Controls highlighted in blue are considered mandatory and must be included if the associated task is included in the hazard assessment.

Consider people, equipment, materials, processes, and the environment when identifying tasks and hazards. Identify and implement engineering (EMG), administrative (ADM) or personal protective equipment (PPE) controls to help reduce the probability or severity of identified hazards.

# WORKING WITH EQUIPMENT

|  |  |  |  |
| --- | --- | --- | --- |
| **Equipment** | **Hazards** | **Controls** | **Source** |
| **Drones and Unmanned Aerial Vehicles** | UC requirementsLegal and legislative requirements | ADM: Drone approval ADM: Drone pilot certificate ADM: Transport Canada UAV regulations | RMIRMITransport Canada |
| Entering restricted air spaceDamage to environmentSpooking wildlife | ADM: Transport Canada UAV regulations | Transport Canada |
| Injury to operator | ADM: TrainingADM: Safe Operating Procedure | SupervisorSupervisor |
| Damage to equipment | ADM: Must report damage to RMI ADM: Complete a level 1 OARs reportADM: Manufacturer specificationsADM: Inspection and maintenance | RMISupervisorSupervisor |
| Other: specify |  |  |
| **Firearms** | Legal and legislative requirementsUC Requirements | ADM: Firearms Acquisition/Possession LicenceADM: Firearms TrainingADM: Contact Campus Security | Government of CanadaCampus Security |
| Damage to equipmentStolen equipment | ADM: Transport in secure manner with trigger lockADM: Store in locked, approved storage only |  |
| Accidental dischargeInjury to self or others | ADM: Hire a qualified local guideADM: Practice safe handlingADM: Ensure chamber is empty and safety is on when not in use |  |
| **Specialized Research Equipment** | UC requirements | ADM: Contact RMI regarding insurance | RMI |
| Damage to equipmentInjury to self or others | ENG: Use all built in safety devices (ex: guard)ADM: Safe Operating ProcedurePPE: If required – specify: |  |
| Equipment failure | ADM: Manufacturer specificationsADM: Maintenance and inspection |  |
| **Cranes, Hoists, Lifting Devices** | UC Requirements | ADM: Cranes, Hoists, and Lifting Devices ProgramADM: Powered Mobile Equipment Program | EHSEHS |
| Damage to property and equipmentInjury to self or others | ADM: Overhead Powerlines ProgramADM:” Overhead Crane Course- approved vendor - #KEL-CT101 -Kristian Electric LTD.ADM: Aerial Work Platform and Self-Propelled Elevated Work Platform (Boom Lift) Training- approved vendor – AIP-Accident Injury Prevention | EHSEHSEHS |
| Equipment failure | ADM: Manufacturer specificationsADM: Maintenance and inspection |  |
| Other: specify |  |  |
| **Hazardous Energy** | UC Requirements | ADM: Control of Hazardous Energy Program ADM: Lock out/tag out procedures ADM: Lock out/tag out training | EHSEHSEHS |
| Shock, electrocution | PPE: Non-conductive footwear |  |
| Contact with overhead power lines or underground utilitiesDamage to propertyInjury to self or others | ADM: Overhead Powerlines ProgramADM: Utilities locateADM: Safe limit of approach distanceADM: Signage, taglines | EHSEHSSupervisorSupervisor |
| Other: specify |  |  |
| **Sharps** | Injury to self and others | ADM: Safe Operating ProcedurePPE: Cut resistant gloves |  |
| Accidental injection or exposure | ADM: Post exposure protocol | EHS |
| Other: specify |  |  |
| **Welding** | Injury to self | ADM: TrainingPPE: Welder’s helmet, heat resistant gloves, heat /flame resistant chaps |  |
| Injury to others | ENG: Screen or physical and visual separation |  |
| Damage to property or equipment | ADM: Safe Operating ProceduresADM: Manufacturer specifications ADM: Maintenance and inspection |  |
| fire | ENG: Fire extinguisher on siteADM: Fire extinguisher training | EHS |
| Other: specify |  |  |
| **Chainsaws** | Injury to self  | ADM: Training – approved vendor- Chainsaw Awareness Level 1 training – Hayes Safety TrainingADM: Hearing Conservation ProgramADM: Hearing Conservation TrainingPPE: Hearing protection, safety eyewear, helmet with face shield, cut resistant gloves, cut resistant chaps, safety boots | EHSEHSEHSSupervisor |
| Damage to property or equipment | ADM: Manufacturer specificationsADM: Maintenance and inspection |  |
| Other: specify |  |  |
| **Air Pressure Tools** | Injury to self  | ADM: Hearing Conservation ProgramADM: Hearing Conservation TrainingPPE: Hearing protection, safety eyewear | EHSEHSEHS |
| Damage to property or equipmentInjury to others | ADM: Safe Operating ProcedureADM: Manufacturer specificationsADM: Maintenance and inspection |  |
| Other: specify |  |  |
| **Power Tools** | Injury to self  | ADM: Hearing Conservation ProgramADM: Hearing Conservation TrainingPPE: Hearing protection, safety eyewear | EHSEHSEHS |
| Damage to property or equipmentInjury to others | ADM: Safe Operating ProcedureADM: Manufacturer specificationsADM: Maintenance and inspection |  |
| Other: specify |  |  |
| **Hand Tools** | Injury to self | ADM: Safe Operating ProcedureADM: Pre-use inspectionPPE: Specify |  |
| **Other: Specify** |  |  |  |

# WORKING WITH MATERIALS

|  |  |  |  |
| --- | --- | --- | --- |
| **Material** | **Hazards** | **Controls** | **Source** |
| **Explosives / Pyrotechnics** | UC requirements | ADM: Pyrotechnic Special Effects Manual, April 2014 - Third Edition (Natural Resources Canada) | EHS |
| Injury to self | ADM: Hearing Conservation ProgramADM: Hearing Conservation TrainingPPE: Hearing protection, safety eyewear, heat resistant gloves, other: specify | EHSEHSSupervisor |
| Injury to othersDamage to equipment or property | ADM: Safe operating proceduresADM: Training, competency, supervisionADM: Manufacturer specifications |  |
| Fire | ENG: Fire extinguisherENG: Fire extinguisher training | EHS |
| Other: specify |  |  |
| **Working with open flames or work that produces heat or sparks** | FireDamage to property or equipment | ENG: Fire extinguisherENG: Fire extinguisher trainingADM: Permit ADM: Hot Works and Dust ProgramPPE: Flame resistant/retardant clothing | SupervisorEHSEHSEHSSupervisor |
| Other: specify |  |  |
| **Working with Chemicals** | General chemical hazards | ADM: WHMIS 2015ADM: WHMIS 15 trainingADM: Safety Data Sheet (SDS)ADM: Lab Safety Manual (relevant sections)ADM: Laboratory Safety TrainingADM: Standard Operating Procedure (SOP) using template | EHSEHSEHSEHSEHSEHSEHS |
| Injury to self (absorption, inhalation, ingestion, etc.) specify | ENG: Ventilation (outdoors, fume hood, snorkel, etc.) specifyADM: TrainingPPE: Specify |  |
| Transportation of chemicals | ADM: TDG regulations ADM: TDG trainingADM: Ship to site (courier)ADM: Query how materials could be transported | Transport CanadaEHS |
| Other: specify |  |  |
| **Working with Biologicals** | General biological hazards | ADM: Pathogen Safety Data Sheet (PSDS)ADM: Biosafety Manual (relevant sections)ADM: Biosafety TrainingADM: Standard Operating Procedure (SOP) using templateADM: Contact biosafety.officer@ucalgary.ca | EHSEHSEHSEHSBiosafety Officer |
| Exposure or contamination | ADM: Post exposure protocol |  |
| Transportation of biological materials | ADM: TDG regulationsADM: TDG trainingADM: Hip to site (courier)ADM: Query how materials could be transported | Transport CanadaEHS |
| Other: specify |  |  |
| **Working with Radiation (radioisotopes, x-ray, lasers)** | General radiation hazards | ADM: Radiation, X-Ray, Laser Safety Manual (relevant sections)ADM: Radiation, x-ray, Laser Safety Training (relevant)ADM: Standard Operating Procedure (SOP) using templateADM: Contact radsafe@ucalgary.ca  | EHSEHSEHSEHSRad Safety Officer |
| Injury to self | PPE: Specify |  |
| Transportation of radioactive materials | ADM: TDG regulations ADM: TDG trainingADM: Ship to site (courier)ADM: Query how materials could be transported | Transport CanadaEHS |
| Other: specify |  |  |
| **Working with other materials: specify** | Specify: |  |  |

# TRANSPORTATION – DRIVING OR OPERATION OF VEHICLES, WATER VESSELS, AIRCRAFT, ETC.

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Driving -general** | Road condition, road closures, detours, constructionweather conditions | ADM: Drive according to conditionsADM: Consult road closure advisories prior to departure, plan route accordinglyADM: Journey management planADM: Monitor weather reportsADM: Snow tiresADM: Check fluid levels prior to departureADM: Emergency roadside safety kitPPE: Wear sunglasses |  |
| Vehicle traffic, pedestrian trafficWildlife on road | ADM: Follow all traffic signsADM: Follow all speed limits, slow down if necessaryADM: Be aware of surroundingsADM: Avoid driving at night |  |
| Injury to self or othersMotor vehicle accidentDamage to property or equipment | ENG: Wear seat beltADM: Vehicle Safety StandardADM: First aid kitADM: Fire extinguisherADM: Follow incident reporting instructionsADM: Insurance |  |
| Vehicle breakdown | ADM: Vehicle Safety StandardADM: Pre-trip inspection (logbook)ADM: Emergency roadside toolkitADM: Emergency roadside assistance providerADM: Regular maintenance and inspectionADM: Manufacturer specifications and trouble shooting guide |  |
| Other: specify |  |  |
| **Driving on University Business in North America** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirementsADM: Must comply with Renting Vehicles while Traveling requirementsADM: Must comply with Fleet Drivers Handbook requirements | EHSRMIFM- Fleet |
| **Driving on University Business in International Locations outside of North America (rental vehicles)** | UC Requirements  | ADM: Must comply with Vehicle Safety Standard requirementsADM: Must comply with Renting Vehicles while Traveling requirements | EHSRMI |
| **Driving 12+ Passenger Van** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirementsADM: Must comply with Renting Vehicles while Traveling requirementsADM: Must comply with Fleet Drivers Handbook requirementsADM: Must contact RMI | EHSRMIFM-FleetRMI |
| **Driving Motorcycle or Scooter** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirementsADM: Must comply with Renting Vehicles while Traveling requirementsADM: Must contact RMIPPE: DOT approved helmet | EHSRMIRMI |
| **Driving and Towing a Trailer** | UC Requirements  | ADM: Must comply with Vehicle Safety Standard requirementsADM: Must comply with Renting Vehicles while Traveling requirementsADM: Must comply with Fleet Drivers Handbook requirements | EHSRMIFM-Fleet |
|  | Poor controlPoor visibility | ENG: Appropriate side mirrors to provide line of siteADM: Pre-trip inspection to check for signal light functionADM: Training, competency ADM: Slowdown  |  |
| **Operating off-Road Vehicles (ATVs, UTVs, etc.)** | UC Requirements | ADM: Must comply with Vehicle Safety Standard requirementsADM: Must comply with Fleet Drivers Handbook requirementsADM: Contact RMI | EHSFM-FleetRMI |
| Injury  | ENG: Roll barsADM: Training, competencyADM: Safety kitPPE: DOT approved helmet |  |
| Damage to environment | ADM: Implement environmentally safe riding practicesADM: Reduce speed  |  |
| breakdown | ADM: Inspection and maintenanceADM: Manufacturer specifications and trouble shooting guideADM: Tool and repair kit |  |
| Other: specify |  |  |
| **Operating Snowmobiles** | UC Requirements | ADM: Contact RMI | RMI |
| Injury to selfInjury to others | ADM: Training, competencyADM: Safety kitADM: Dress appropriate for weatherPPE: DOT approved helmet |  |
| Damage to environment | ADM: Implement environmentally safe riding practicesADM: Reduce speed  |  |
| breakdown | ADM: Inspection and maintenanceADM: Manufacturer specifications and trouble shooting guideADM: Tool and repair kit |  |
| Other: specify |  |  |
| **Operating Motorized Watercraft (motorboats, sea-doos, etc.) - specify** | UC Requirements | ADM: contact RMIADM: Operator’s licence  | RMI |
| Injury drowning | ADM: Training, competencyADM: Swimming skills assessmentPPE: Personal floatation device |  |
| breakdown | ADM: Inspection and maintenanceADM: Manufacturer specifications and trouble shooting guideADM: Tool and repair kit |  |
| Other: Specify |  |  |
| **Operating Non-motorized Watercraft (sailboats, canoes, kayaks, paddleboards, etc.)- specify** | UC Requirements | ADM: Contact RMI | RMI |
| Injurydrowning | ADM: Training, competencyADM: Swimming skills assessmentPPE: Personal floatation device | RMI |
| Other: specify |  |  |
| **Operating aircraft** | UC Requirements | ADM: Contact RMIADM: Pilot licence | RMI |
| accident | ADM: Training, competencyOther: Specify |  |
| Other: specify |  |  |
| **Other: Specify** |  |  |  |

# TRANSPORTATION – CONTRACTED COMMERCIAL OR CHARTER TRANSPORTATION SERVICES

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Travel by Charter Bus, Motor Coach, or School Bus** | UC Requirements | ADM: Use preferred vendor approved by Supply Chain Management for travel within North AmericaADM: Use of International SOS online form to identify pre-screened ground transportation for international locations ADM: International destinations must register in the travel registry | SCMRMIRMI |
| Missing or lost personMissed connection | ADM: Use attendance checklist during boardingADM: Travel as a groupADM: Use buddy system if separated from groupADM: Journey management plan |  |
| Other: specify |  |  |
| **Travel by Train** | UC Requirements | ADM: Use preferred vendor approved by Supply Chain Management ADM: Use of International SOS online form to identify pre-screened ground transportation for international locations ADM: International destinations must register in the travel registry  | SCMRMIRMI |
| Missing or lost personMissed connection | ADM: Use attendance checklist during boardingADM: Travel as a groupADM: Use buddy system if separated from groupADM: Journey management plan |  |
| Other: specify |  |  |
| **Travel by Commercial Airplane** | UC Requirements | ADM: Use preferred vendor approved by Supply Chain ManagementADM: International destinations must register in the travel registry | SCMRMI |
| Missing or lost personMissed connection | ADM: Use attendance checklist during boardingADM: Travel as a groupADM: Use buddy system if separated from groupADM: Journey management plan |  |
| Other: specify |  |  |
| **Travel by Charter Airplane or Helicopter** | UC Requirements | ADM: Contact RMI (insurance)ADM: Contact SCM (contract)ADM: Contact EHS (hazard assessment)ADM: Register in the travel registry | RMISCMEHSRMI |
| Missing or lost personMissed connection | ADM: Use attendance checklist during boardingADM: Travel as a groupADM: Use buddy system if separated from groupADM: Journey management plan |  |
| Other: specify |  |  |
| **Travel by Charter Watercraft** | UC Requirements | ADM: Contact RMI (insurance)ADM: Contact SCM (contract)ADM: Contact EHS (hazard assessment)ADM: Register in the travel registry | RMISCMEHSRMI |
| Missing or lost personMissed connection | ADM: Use attendance checklist during boardingADM: Travel as a groupADM: Use buddy system if separated from groupADM: Journey management plan |  |
| drowning | ENG: Lifeboat, buoy, rescue equipmentADM: Swimming assessment, competencyPPE: Personal floatation device |  |
| Other: specify |  |  |

# DESTINATION OR LOCATION RELATED HAZARDS

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Location** | **Hazards** | **Controls** | **Source** |
| **All Destinations** | Current events | ADM: Check communities advisories for political events, weather events, health advisories, active incidents, etc. which may impact health and safetyADM: FLHA ADM: Meeting with all participants daily to review new hazards | SupervisorEHSSupervisor |
| **All International locations** | UC Requirements | ADM: Register travel with travel registryADM: Follow RMI international Program requirementsADM: Follow Global Learning programming and proceduresADM: International Travel PolicyADM: International Travel ProcedureADM: Contact RMI regarding loaner device to ensure data security | RMIRMIGLRMIRMIRMI |
| **Controlled Activity Sites under Another Authority** Research Field Stations, Universities, Schools, Community Facilities, etc. | UC Requirements | ADM: Site specific orientation including emergency response procedures to be provided upon arrivalADM: Review site specific website guidance for visitors  | SupervisorSupervisor |
| Weather related hazards | ADM: Dress appropriately for weatherADM: Monitor weather- provide specific website | SupervisorSupervisor |
| Vehicle and pedestrian traffic | ADM: Follow all posted traffic related postingsADM: Be aware of surroundings |  |
| Getting lost | ADM: Travel as a group ADM: Use a buddy system when separated from main group |  |
| Terrain related hazards | ADM: Be aware of surroundingsPPE: Wear appropriate footwear |  |
| Other: specify |  |  |
| **Urban Area** An incorporated City, Town or Village | Weather related hazards | ADM: Dress appropriately for weatherADM: Monitor weather- provide specific website | SupervisorSupervisor |
| Vehicle and pedestrian traffic | ADM: Follow all posted traffic related postingsADM: Be aware of surroundings |  |
| Getting lost | ADM: Travel as a group ADM: Use a buddy system when separated from main group |  |
| Interactions with strangers | ADM: Be respectful and courteousADM: Travel as a group ADM: Use a buddy system when separated from main group |  |
| Other: specify |  |  |
| **Isolated Location**(a) a site that is located over 350 km from the nearest population centre with conventional services and year-round road access. (b) a settlement that has regular air service and reliable telephone service but no year-round road access, and c) for the purpose of determining first aid requirements, an Indigenous, Inuit or Métis settlement where conventional services may not be reliable or available.  | UC Requirements | ADM: Field Safety TrainingADM: Register in travel registry  | EHSRMI |
| Weather related hazards | ADM: Dress appropriately for weatherADM: Monitor weather- provide specific website | SupervisorSupervisor |
| Wildlife related hazards | ADM: Refer to Unintended Wildlife Encounter Risk Matrix for guidanceADM: Carry bear sprayADM: Work in groups of 2 or more | EHS |
| Terrain related hazards | ADM: Be aware of surroundingsPPE: Wear appropriate footwear |  |
| Vehicle and pedestrian traffic | ADM: Follow all posted traffic related postingsADM: Be aware of surroundings |  |
| Getting lost | ENG: Use a GPS enabled deviceADM: Training on GPS enabled deviceADM: Travel as a group ADM: Use a buddy system when separated from main groupADM: Communication plan |  |
| Interactions with strangers | ADM: Be respectful and courteousADM: Travel as a group ADM: Use a buddy system when separated from main group |  |
| Other: specify |  |  |
| **Remote Locations** a site that: (a) is 80 kms or more from la settlement or community with a population of 1,000 or more; (b) that lacks transportation and communication links that are typical in more populated areas; and (c) may be located on grazing and ranch lands. | UC Requirements | ADM: Field Safety Training | EHS |
| Weather related hazards | ADM: Dress appropriately for weatherADM: Monitor weather- provide specific website | SupervisorSupervisor |
| Getting lost | ENG: Use a GPS enabled deviceADM: Training on GPS enabled deviceADM: Travel as a group ADM: Use a buddy system when separated from main groupADM: Communication plan |  |
| Wildlife related hazards | ADM: Refer to Unintended Wildlife Encounter Risk Matrix for guidanceADM: Carry bear sprayADM: Work in groups of 2 or more |  |
| Terrain related hazards | ADM: Be aware of surroundingsPPE: Wear appropriate footwear |  |
| Other: specify |  |  |
| **Wilderness Locations** (a) an area that has not been subject to significant human development activity; (b) rural areas that are not under agricultural cultivation; and (c) marine environments. | UC Requirements | ADM: Field Safety TrainingADM: Register in trave; registry using GPS coordinates | EHSRMI |
| Weather related hazards | ADM: Dress appropriately for weatherADM: Monitor weather- provide specific website | SupervisorSupervisor |
| Getting lost | ENG: Use a GPS enabled deviceADM: Training on GPS enabled deviceADM: Travel as a group ADM: Use a buddy system when separated from main groupADM: Communication plan |  |
| Wildlife related hazards | ADM: Refer to Unintended Wildlife Encounter Risk Matrix for guidanceADM: Carry bear sprayADM: Work in groups of 2 or more |  |
| Terrain related hazards | ADM: Be aware of surroundingsPPE: Wear appropriate footwear |  |
| Other: specify |  |  |
| **Extreme Locations** Volcano, glacier, ocean, etc. Be specific | UC Requirements | ADM: Contact RMI (insurance)ADM: Contact EHS (hazard assessment)ADM: Location specific training and competency requirements)ADM: Register with travel registry using GPS coordinates | RMIEHSRMI |
| Getting lost | ENG: GPS enabled deviceENG: Communication deviceADM: Training on GPSADM: Training on communication deviceADM: Communication plan |  |
| Weather related hazards | ENG: ShelterADM: Dress for weatherADM: Monitor weather- specify websiteADM: Survival training |  |
| Wildlife related hazards - specify |   |  |
| Terrain related hazards/ natural disaster - specify |  |  |
| Other: |  |  |

# OUTDOOR ACTIVITIES

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Exposure to Elements** | UC Requirements | ADM: Field Safety TrainingADM: [The Red Cross First Aid App](https://www.redcross.ca/training-and-certification/first-aid-tips-and-resources/first-aid-app) | EHSEHS |
| Heat/SunHeat stroke/sun stroke, heat exhaustion, sun burnStrong sun/UV exposuredehydration | ENG: Shelter or shadeADM: [Government of Alberta Working in Extreme Temperatures](https://www.alberta.ca/working-extreme-temperatures.aspx) ADM: Carry drinking water, water filtration deviceADM: Sunblock, sunscreen, hat, sunglasses, long sleevesADM: Take frequent breaksOther: Specify |  |
| Cold Frost bite, hypothermia, dehydration | ENG: ShelterADM: [Government of Alberta Working in Extreme Temperatures](https://www.alberta.ca/working-extreme-temperatures.aspx)ADM: [Winter Hiking Gear and Clothing](https://sectionhiker.com/recommended-winter-day-hiking-gear-list-2021-2022/)ADM: Layer clothingADM: Schedule breaksADM: Carry water, energy barsOther: Specify |  |
| Snow and iceSlip trip fall, avalanche | ENG: Walking poles to test ice and snowpackADM: Walk like a penguinADM: Avalanche trainingADM: Locator beaconPPE: Ice cleats, boots with treadsOther: Specify |  |
| Rain Hypothermia, flooding, drowning | ENG: ShelterADM: Monitor weather forecast specify websiteADM: [Government of Alberta Thunderstorms, Lightning, Heavy Rain and Hail](https://www.alberta.ca/thunderstorms-lightning-heavy-rain-and-hail.aspx)PPE: Rain gear, umbrellaOther: Specify |  |
| Electrical stormselectrocution | ENG: ShelterADM: [Government of Alberta Thunderstorms, Lightning, Heavy Rain and Hail](https://www.alberta.ca/thunderstorms-lightning-heavy-rain-and-hail.aspx)ADM: Monitor weather forecast specify websiteOther: Specify |  |
| Wind- flying debris | ENG: ShelterADM: [Government of Alberta Thunderstorms, Lightning, Heavy Rain and Hail](https://www.alberta.ca/thunderstorms-lightning-heavy-rain-and-hail.aspx)ADM: Monitor weather forecast specify websiteOther: Specify |  |
| Natural DisasterHurricane, TornadoEarthquake,Volcanic EruptionDeath or injury | ENG: ShelterADM: Register with travel registryADM: Monitor weather forecast specify websiteADM: Go-no goOther: Specify |  |
| Forest fire/Wildfire/smoke/dust stormAir quality, aggravated existing medical conditionsHeat, burnsReduced visibilityEmergency evacuation, detours | ADM: Monitor air quality website- specify websiteADM: Monitor forest fire website- specify websiteADM: Monitor road closure website- specify websiteADM: Medication for existing conditionsADM: Buddy system or travel as a groupADM: Follow evacuation orders or planADM: Go-no-goPPE: N95 maskOther: Specify |  |
| Exposure to toxins, allergens | ADM: Medication for existing conditions (asthma, allergies)ADM: Buddy system or travel as a groupADM: Seek medical aid as necessaryOther: Specify |  |
| **Exposure to Wildlife, insects, etc.** | UC Requirements | ADM: Field Safety TrainingADM: [The Red Cross First Aid App](https://www.redcross.ca/training-and-certification/first-aid-tips-and-resources/first-aid-app) | EHSEHS |
| Wildlife EncountersBear, cats, wolves, coyotesLarge ungulates(Intended and unintended) | ADM: Refer to Unintended Wildlife Encounter Risk Matrix ADM: Emergency response plan for wildlife studies in event of aggressive animal encounterADM: Travel in groups/buddy systemADM: Hire local guide or expertADM: Monitor for sign and behaviourADM: Proper food and waste storageADM: Make noiseADM: Use deterrent if trained-check expiry dateADM: Report bear sightings to appropriate authoritiesOther: Specify | EHS |
| Other Dangerous Wildlife (exotic) | ADM: Engage a local guideADM: On site briefing and education |  |
| Hanta virus (mouse feces) | ADM: Avoid disturbing mouse fecesADM: Spray feces with water prior to disturbingPPE: N95 mask (for mouse feces clean up) |  |
| Ticks- Lyme DiseaseMosquitos- West Nile VirusBlack fly, deer flyFleas, lice | ADM: Wear long pants and long-sleeved shirtADM: Avoid standing water, marsh and bog areasADM: Apply insect repellantADM: Mosquito nettingOther: Specify |  |
| Bee and wasp sting Allergic reaction | ADM: EpiPen/antihistamine |  |
| Giardia, E. Coli | ADM: Carry drinking waterADM: Water filtration device ADM: Proper hand hygieneADM: Do not drink water from steams, rivers, or lakesOther: Specify |  |
| **Hiking** | Fall from heights, cliff edge, drop off, narrow or limited egress | ADM: Avoid narrow passages, extreme heights, cliff edges, overhangs, cornices, etc.ADM: Tie off ADM: Control zoneOther: Specify |  |
| Difficult/uneven terrainslippery walking surfaces/ loose rocksslip trip fall | ADM: Appropriate footwearADM: Walking polesADM: Situational awarenessADM: Fit for taskOther: Specify |  |
| Falling objects | ADM: Avoid areas of falling rocks or debrisADM: Seek shelter during high windsADM: Be aware of surroundingsPPE: HelmetOther: Specify |  |
| Getting lost | ADM: Travel in groupADM: Use buddy system when separated from groupADM: Communication planADM: Missing person / lost contact planADM: GPS enabled device, navigation deviceADM: Training on GPS enabled device, navigation deviceADM: Signal for help (smoke, flare, whistle, call)Other: Specify |  |
| Injury to self and or othersExposure to toxic plants | ADM: Avoid poison ivy, nettle, etc.ADM: Certified first aider- see requirementsADM: First aid kit – see requirementsADM: ShelterOther: Specify |  |
| **Camping** | Wildlife encroachment | ADM: Refer to Unintended Wildlife Encounter Risk MatrixADM: Follow proper food and waste storage practices (no food or waste in tents)ADM: Buddy systemADM: Implement wildlife watch/monitoring |  |
| Fire | ADM: Keep fire pit away from structuresADM: Access to waterADM: Do not leave fire unattendedADM: Clear camp area of debris |  |
| Wind | ADM: Secure tents ADM: Keep camp area free of debrisADM: Collect and secure waste appropriately |  |
| **Extreme Sports / Extreme Terrain**(rock climbing, mountaineering, ice climbing, etc.) | Personal injuryInjury to othersSlip trip fallLoose rocks, falling ice, avalanche, mudslide, etc. | ADM: Contact RMI (insurance)ADM: Contact EHS (hazard assessment)ADM: Activity specific training and competency requirements)ADM: Register with travel registry using GPS coordinates | RMIEHSRMI |
| **Water Related Activities****Specify activity**(boating, swimming, snorkeling, scuba diving, water collection, wading, etc.)**Specify type of body of water**(creek, river, lake, ocean, winter run off, waste water system, etc.) | UC Requirement | ADM: Contact RMI (insurance)ADM: Contact EHS (hazard assessment) | RMIEHS |
| drowning | ADM: Swimming skill assessment, competency, ADM: SupervisionADM: Buddy systemPPE: Personal floatation device |  |
| Fast moving currentHigh waterDebris in waterDrowningSwept away by current | ADM: Go-no-goADM: Visual inspection of waterwayADM: SupervisionADM: Buddy systemADM: Tie off to shore, restricted parameterPPE: Hip waders, waterproof bootsPPE: Personal floatation device |  |
| Soft or unstable banks /shorelineFallingDrowningSwept away by current | ADM: Go-no goADM: Buddy systemADM: Tie off to shorePPE: Hip waders, waterproof bootsPPE: Personal flotation device |  |
| **Working from Heights****Specify**(Rock climbing, climbing trees, ladder work, etc.) | Personal injuryFallsdeath | ADM: Contact RMI (insurance)ADM: Contact EHS (hazard Assessment)ENG: Fall restraint deviceADM: Fall Protection ProgramADM: Fall Protection PlanADM: Fall restraint training (contact EHS) | RMIEHSEHSSupervisorEHS |
| Fall from ladder | ADM: Ladder Safety Training | EHS |
| **Working Underground****Specify**(Caves, confined space, limited access/egress, etc.) | UC Requirements | ADM: Contact RMI (insurance)ADM: Contact EHS (hazard assessment)ADM: Confined Space Entry ProgramADM: Confined Space Entry Training (approved vendor – IRWIN’S Industrial Safety) | RMIEHEEHSEHS |
| EntrapmentCave in / asphyxiationGetting lost  | ADM: Training and competencyADM: Buddy systemADM: Rope linePPE: Helmet |  |
| **Ground Disturbance** | Contact with underground utilities | ADM: Ground Disturbance ProgramADM: Ground Disturbance 201 Training endorsed by Alberta Common Ground Alliance- approved vendor – Alberta Construction safety AssociationADM: Use approved contracted services | EHSEHS |
| **Lifting and Carrying Loads** | UC Requirement | ADM: Industrial Ergonomics Training | SW |
| Muscle strain/sprain | ADM: Use of proper lifting techniquesADM: Team liftingADM: Use of lifting aids (cart, dolly, etc.) |  |
| **Sporting activities****Specify**(Team sports, biking, skateboarding, etc.  | Muscle strain/sprainSlip trip fallOver exertion/fatigueDehydrationHet stroke/heat exhaustion | ADM: Stretching exercisesADM: Take breaksADM: Fit for participationADM: Access to fluidsADM: Shelter from elements |  |

# RESEARCH RELATED ACTIVITIES (ANIMAL, HUMAN, OTHER)

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Animal Research** Intentional contact with animals or encroachment of animal habitat**Specify type of animal(s)** (Small domestic animals, rodents, livestock, wildlife, birds, fish, etc.)**Specify activity**(Monitoring, tagging, tracking, etc.) | UC Requirements | ADM: IAUTP Training CertificateADM: Approved Animal Use ProtocolADM: Park or site-specific permit (if required) | ARCARC |
| Bites, kicks, scratchesTrampled, crowdedPersonal injury | ADM: Animal handling training and competencyADM: Teamwork (do not work alone with large animals)ADM: Training and proper use of chutes/processing equipmentADM: Use of tranquilizersADM: Standard Operating ProcedureADM: Stick or prod to maintain distanceADM: Barrier between self an animalPPE: Safety footwear, safety eyewear, glovesOther: Specify |  |
| Aggressive or defensive Wildlife encounter | ADM: Wildlife and wilderness awareness trainingADM: Standard Operating ProcedureADM: Emergency response PlanADM: TeamworkADM: Report to authorities if required/appropriateOther: Specify | EHS |
| Zoonotic disease  | ADM: ADM: animal handling trainingADM: Post exposure protocolADM: First aider and first aid kit on sitePPE: Bite resistant gloves |  |
| Other: specify |  |  |
| **Human Research****Specify setting**(Clinic settings, community setting, private homes, etc.) | UC Requirements | ADM: Ethics Training ADM: Harassment PolicyADM: Harassment and Violence ProgramADM: Harassment and Violence Awareness TrainingADM: Communication Plan | VPRHREHSEHSSupervisor |
| Harassment, bullying, violence, hostile behaviour | ADM: Site specific trainingADM: Standard Operating ProcedureADM: Emergency Response PlanADM: De-escalation trainingADM: Buddy systemOther: Specify |  |
| Language barriersCultural barriers | ADM: Use of local guideADM: Cultural awareness trainingOther: Specify |  |
| Exposure to addiction, mental health and emotional health challenges, inappropriate behaviours | ADM: Situational awareness, aware of surroundingsADM: Naloxone trainingADM: Naloxone kit on siteADM: Respectful behaviourADM: SupervisionADM: Buddy system, teamworkOther: Specify |  |
| Exposure to pre-existing physical or medical needs | ADM: Industrial Ergonomics TrainingADM: Patient transfer trainingADM: Situational awareness, aware of surroundingsADM: Respectful behaviourADM: Teamwork, buddy system, supervisionOther: specify | SW |
| Other: specify |  |  |
| **Other: Specify** |  |  |  |

# HUMAN BEHAVIOUR (WORKING WITH OTHERS, WORKING ALONE)

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **Hazards** | **Controls** | **Source** |
| **Field schools****Field trips**  | * General health and safety
* Provision of instruction and guidance
* Oversight and adherence to guidelines
* Authority and reporting structure
* Emergency response
 | ADM: Supervision to include instructor of record or sessional instructor or contracted industry guideADM: number of supervisors / leaders / program Assistants / responsible adults and TAs should be appropriate for group size, location and/or activity related hazards ADM: Supervision requirements for high-risk locations or activities at the discretion of the Department Head / Faculty Leadership / trip approverADM: All supervisors / leaders / Program Assistants / responsible adults / TAs must be certified in first aid and have completed all identified trainingADM: Volunteers must be registered with RMI | Supervisor |
| **Working in Groups****Teamwork****Working with or near Others** | AddictionEmotional or mental health challenges and related behaviours | ADM: [Alcohol Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/alcohol-policy)ADM: [Cannabis Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/cannabis-policy)ADM: [Smoking Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/smoking-policy)ADM: Respect in the WorkplaceADM: De-Escalation TrainingADM: Naloxone TrainingADM: Naloxone kitADM: Discuss expectations and accepted behavioursADM: [Wellness Services training options](https://www.ucalgary.ca/wellness-services/services/mental-health-services/training)ADM: [The Working Mind/](https://www.ucalgary.ca/hr/wellness/wellbeing-worklife/workshops-programs/working-mind) The Student MindADM: [Red Cross Psychological First Aid Training](https://www.ucalgary.ca/ActiveLiving/registration/Program/PFA?path=All_First-Aid-and-CPR)ADM: [The Four Stages of Psychological Safety Behavioral Guide](https://uofc.sharepoint.com/%3Ab%3A/r/sites/FieldSafety-Administration/Shared%20Documents/Administration/Working%20Documentation/The_Four_Stages_of_Psychological_Safety_Behavioral_Guide.pdf?csf=1&web=1&e=jf83pd) |  |
| Harassment, BullyingViolence, Sexual Violence | ADM: Workplace Violence PolicyADM: [Harassment Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/harassment-policy)ADM: [Sexual and Gender-Based Violence Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/sexual-and-gender-based-violence-policy)ADM: [Workplace Violence Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/workplace-violence-policy)ADM: Harassment and Violence ProgramADM: Harassment and Violence Awareness TrainingADM: [Supervisor Resources](https://grad.ucalgary.ca/services/faculty-and-staff/supervisor-resources)ADM: [Wellness Services training options](https://www.ucalgary.ca/wellness-services/services/mental-health-services/training)ADM: [Government of Canada GBA Plus resources and training](https://women-gender-equality.canada.ca/en/gender-based-analysis-plus.html)ADM: Discuss expectations, acceptable behaviour, and personal boundariesADM: Review how to report concernsADM: Model appropriate behaviourADM: Early intervention to correct behaviour issuesADM: Red Cross Psychological First Aid TrainingADM: Appropriate Consent and Harassment Training (Student Wellness)ADM: [The Four Stages of Psychological Safety Behavioral Guide](https://uofc.sharepoint.com/%3Ab%3A/r/sites/FieldSafety-Administration/Shared%20Documents/Administration/Working%20Documentation/The_Four_Stages_of_Psychological_Safety_Behavioral_Guide.pdf?csf=1&web=1&e=jf83pd) | EHSEHSSupervisorSupervisorSupervisorSupervisor |
| Individual Behaviours | ADM: [Code of Conduct](https://www.ucalgary.ca/legal-services/university-policies-procedures/code-conduct)ADM: [Student Non-Academic Misconduct Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/student-non-academic-misconduct-policy)ADM: [Student at Risk Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/student-risk-policy)ADM: Develop a team charterADM: Develop team building activitiesADM: ADM: Review how to report concernsADM: Model appropriate behaviourADM: Early intervention to correct behaviour issuesADM: [Wellness Services training options](https://www.ucalgary.ca/wellness-services/services/mental-health-services/training)ADM: [The Working Mind/](https://www.ucalgary.ca/hr/wellness/wellbeing-worklife/workshops-programs/working-mind) The Student MindADM: [Red Cross Psychological First Aid Training](https://www.ucalgary.ca/ActiveLiving/registration/Program/PFA?path=All_First-Aid-and-CPR)ADM: [The Four Stages of Psychological Safety Behavioral Guide](https://uofc.sharepoint.com/%3Ab%3A/r/sites/FieldSafety-Administration/Shared%20Documents/Administration/Working%20Documentation/The_Four_Stages_of_Psychological_Safety_Behavioral_Guide.pdf?csf=1&web=1&e=jf83pd) | SupervisorSupervisorSupervisorSupervisorSupervisor |
| Discrimination towards indigenous peoples, women, visible/racialized minorities, persons with disabilities, LGBTQ2S+ | ADM: HR resourcesADM: Office of EDI resourcesADM: [Workplace Accommodation Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/workplace-accommodation-policy)ADM: [Supervisor Resources](https://grad.ucalgary.ca/services/faculty-and-staff/supervisor-resources)ADM: [Government of Canada GBA Plus resources and training](https://women-gender-equality.canada.ca/en/gender-based-analysis-plus.html)ADM: ADM: Review how to report concernsADM: Model appropriate behaviourADM: Early intervention to correct behaviour issues | HROEDISupervisorSupervisorSupervisor |
| Imbalance of Authority  | ADM: Set clear expectationsADM: Provide access and opportunity to communication ADM: Define reporting structure ADM: Practice open door policy ADM: Provide avenue to voice concerns safely and without repercussionADM: Develop a team charter | SupervisorSupervisorSupervisorSupervisorSupervisor |
| Pre-existing physical limitationsPre-existing medical (physical, emotional, mental health) conditions that may be impacted by activity or location(Asthma, diabetes, allergies, etc.) | ADM: Assess fitness to participateADM: [Workplace Accommodation Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/workplace-accommodation-policy)ADM: Encourage active disclosure of existing conditions that may be impacted ADM: Encourage open dialogueADM: Create a safe space for disclosure and discussionADM: Model behaviourADM: Encourage disclosure on the required Emergency Contact Information Form | SupervisorSupervisorSupervisorSupervisorSupervisor |
| FatigueWork- Life Imbalance | ADM: Frequent breaksADM: Encourage work-life balanceADM: Specify work hoursADM: Provide opportunity for team building ADM: Provide time for self- reflection  | SupervisorSupervisorSupervisorSupervisor |
| Cabin Fever, Isolation in remote locations, HomesicknessDepression, fatigue, anger, loss of appetite, inability to concentrate, avoidance of group activities, at Risk behaviours | ADM: Red Cross Psychological First Aid TrainingADM: [Student at Risk Policy](https://www.ucalgary.ca/legal-services/university-policies-procedures/student-risk-policy)ADM: [Supervisor Resources](https://grad.ucalgary.ca/services/faculty-and-staff/supervisor-resources)ADM: [Wellness Services training options](https://www.ucalgary.ca/wellness-services/services/mental-health-services/training)ADM: Practice daily mental health check-insADM: Provide access and opportunities to communicate with friends, family, etc.ADM: Know how to report a concernADM: Research mental health resources for location and include in communication planADM: Encourage open dialogueADM: Early intervention |  |
| **Exposure to disease, viruses, etc.** | Direct exposure to respiratory illness transmitted by respiratory droplets that are generated by a person who is coughing, sneezing, or talking. | ADM: Follow all location specific protocols regarding distancing, masking, etc.ADM: Encourage vaccination ADM: Verify mandated vaccination requirements for international destinationsADM: Good hand hygiene- use of hand sanitizer and or frequent hand washing with soap and waterADM: Practice respiratory hygiene covering cough or sneeze ADM: Use masks when in close contact indoors, in vehicles, and in poorly ventilated spaces |  |
| Indirect exposure to respiratory illness on objects and surfaces | ADM: Good hand hygiene- use of hand sanitizer and or frequent hand washing with soap and waterADM: Use disinfectant wipes to disinfect touch points dailyADM: Avoid sharing of equipment and tools when possibleADM: Avoid touching your face |  |
| **Working Alone** | UC Requirements  | ADM: Working Alone StandardADM: Communication plan ADM: UC Safety AppADM: Communication equipment suitable for locationADM: Training on communication equipmentADM: Emergency Response Plan | EHS |
| Injurylost | ADM: Avoid working alone in the field whenever possibleADM: Lone Field Worker Emergency ID ArmbandADM: GPS or location device |  |
| Cabin Fever, Isolation Depression, stress, anxietyFatigue | ADM: Regularly scheduled check insADM: provide wellness strategies such as journaling, yoga, exercise, etc.ADM: Encourage work-life balanceADM: Proper rest and nutritionADM: Emergency Response PlanADM: Know how to report a concernADM: Know how to access mental health support in the area (if available) |  |

For more information contact:

Environment, Health and Safety

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